Data sheet

HP MSM Controller Series

Product overview

Working in unison with HP MSM and Unified Access Points, the IEEE 802.11ac-ready HP MSM Controller Series delivers a high-performance networking solution. The enhanced controller architecture scales to new WLAN standards without requiring a controller replacement. The MSM controllers provide advanced Radio Resource Management (RRM), including client load balancing and interference mitigation. The MSM wireless controllers also support a fast-roaming capability.

Wireless security is comprehensive with integrated wireless IDS and support for internal and external Authentication, Authorization, and Accounting (AAA) servers; a built-in stateful firewall; per-user VLAN mapping; and authentication.

A summary of the highlights of the MSM Controller Series:

- Ease of use, scalability, and redundancy
- Enhanced architecture for flexible network design
- IEEE 802.11a/b/g/n AP and access device support
- Comprehensive WLAN security
- Appliance and blade form factors

Downloaded from www.Manualslib.com manuals search engine

Features and benefits

Management

- **Wi-Fi Clear Connect**
  Provides a system-wide approach to delivering WLAN reliability by proactively determining and adjusting to changing RF conditions; optimizes WLAN performance by detecting interference from Wi-Fi and non-Wi-Fi sources—by using spectrum analysis capabilities built into the specific access points (refer to the HP Access Point—Controller compatibility matrix), identifying rogue activity and making decisions at a system-wide level.

- **Advanced radio resource management**
  - *Automatic radio power adjustments*
    Include real-time power adjustments based on changing environmental conditions and signal coverage adjustment
  - *Automatic radio channel*
    Provides intelligent channel switching and real-time interference detection
  - *Intelligent client load balancing*
    Determines the number of clients across neighboring APs and adjusts client allocation to balance the load
  - *Airtime fairness*
    Helps ensure equal RF transmission time for wireless clients

- **Spectrum analysis**
  - *Power/frequency spectrum analysis*
    Measures noise from IEEE 802.11 remote sources
  - *Signal detection/classification*
    Identifies source of RF interference; for example, Bluetooth, cordless phones, and microwave ovens
  - *Evaluation of channel quality*
    Helps detect severe channel degradation and improves the reporting of poor RF performance

- **Automated work flows**
  - *Initial controller settings*
    Defines basic operational settings for the controller; for example, network connections, security settings, and system time
  - *Wireless network for employees*
    Enables setup of a new wireless network for employees; for example, network and security settings, and basic voice and video settings
  - *Wireless network for guests*
    Provides wireless access for guest users; for example, network and security settings specific to guest access

- **Support for environments using Bonjour services**
  - *Gateway*
    Allows discovery of Bonjour services located in a different layer-3 network
  - *HP Zerocast*
    Eliminates Bonjour multicast traffic from the WLAN enabling scalable deployment of Apple devices with no performance impact on the Wi-Fi network
  - *Access control*
    Enables filters to be applied inbound and outbound (on the AP) to SSIDs, groups of or specific APs. User based filtering can block Bonjour traffic until the user is authenticated

Downloaded from www.Manualslib.com manuals search engine

- **Remote configuration and management**
  Are available through a secure Web browser, command-line interface (console port or SSH), SOAP, or SNMP
- **Management interface control**
  Allows interfaces to be enabled or disabled depending on security preferences
- **Management VLAN**
  Segments traffic to and from management interfaces, including CLI, Web browser interface, and SNMP
- **RADIUS accounting support**
  Separates RADIUS accounting server support per SSID; and provides detailed session, usage, and billing information for each client activity
- **Logging**
  Provides local and remote logging of events via SNMP (v2c and v3) and syslog; and provides log throttling and log filtering to reduce the number of log events generated
- **Controller networking**
  Includes IEEE 802.1D-compliant bridging and bridge MIB (RFC 4188), which is supported only on a primary bridge interface; stateful firewall; PPPoE client (RFC 2516); ICMP (RFC 792); IEEE 802.1Q VLAN tagging; NAT (RFC 1631); CIDR (RFC 1519); L2TP and PPTP servers for wireless clients; VPN client, which establishes PPTP or IPSec tunnels to other devices; and IGMP snooping (IGMP proxy v1 and v2), which is supported on the wireless interfaces of APs
- **DHCP support**
  Includes RFC 2131 and RFC 3046 (DHCP relay option 82) for server and built-in DHCP client for client
- **Band steering**
  Redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum
- **Controller management**
  Provides a secure Web browser (Secure Sockets Layer [SSL] and VPN), command-line interface, SOAP, SNMP v2c and v3, MIB-II with traps, RADIUS Authentication Client MIB (RFC 2618), and RIPv2 MIB extension (RFC 1724); implements scheduled configuration and firmware upgrades from a central server; offers per-user activity records by time used or data transferred; and supports remote syslog
- **HP Intelligent Management Center (IMC) and Wireless Services Manager Software**
  Provide centralized management for discovery, logging, status, and configuration management
- **Unified network visibility**
  Provides visibility between a wired and wireless network, using the IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow
- **Diagnostics**
  Records association, authentication, and DHCP events in client event log; includes a packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format), a wireless client data rate matrix, and a client status page; complete session logging provides detailed information for problem identification and resolution

Downloaded from www.Manualslib.com manuals search engine

Firewall

- **Stateful firewall**
  Enforces firewall policies to control traffic and filter access to network services; maintains session information for every connection passing through it, enabling the firewall to control packets based on existing sessions
- **NAT/PAT**
  Leverages a choice of dynamic partial address translation (PAT) or static network address translation (NAT) preserves a network's IP address pool or conceals the private address of network resources such as Web servers, which are made accessible to users of a guest or public wireless LAN
- **Authenticated network access**
  Authenticates users with an internal or external RADIUS server or Microsoft® Active Directory before allowing full network connectivity

Quality of Service (QoS)

- **Rate limiting**
  Supports per-wireless client, ingress-enforced maximums and per-wireless client, per-queue guaranteed minimums
- **Centralized traffic**
  Layer 2 and Layer 3 QoS settings are maintained when using the Mobility Traffic Manager or guest access

Mobility

- **HP MSM solutions enhanced for businesses**
  Delivers services for a range of vertical markets, including healthcare, hospitality, education, manufacturing, transportation, and service providers
- **Powerful security capabilities**
  Enables robust identity- and role-based user account profiles to use internal or external AAA services
- **Solutions that cover the most important WLAN applications**
  Deliver rich application support, including guest access, location-based services, Voice over Wi-Fi (VoW), hotspot, surveillance, and secure point of sale
- **Capacity that scales from small office to large campus**
  Deploy wireless LANs (WLANs) efficiently with the MSM720 controller (which supports 10 to 40 APs) and the MSM760, MSM765 zl, and MSM775 zl controllers (which control 40 to 200 APs)
- **Premium mobility scalability features**
  - *Virtual Controller*
    Managed by a single IP address; the MSM76x and MSM775 zl each support a team of up to 800 APs and five controllers and the MSM720 a team of up to 40 APs across two controllers (a team requires the same controller type)
  - *N+1 redundancy*
    Teaming provides N+1 redundancy
  - *Seamless failover*
    APs can failover without rebooting, preserving mobility services when client traffic is bridged locally at the AP
  - *64 VSC profiles*
    Allows up to 64 defined profiles

Downloaded from www.Manualslib.com manuals search engine

- **Mobility Traffic Manager**
  Provides flexible and multiple network distribution schemes address a range of business needs; policies for user network and security profiles are consistently applied and enforced; wireless traffic can be directed anywhere in the network as required; enterprise businesses can easily migrate to the MSM mobility solution, preserving prior network designs
- **Controller client access control**
  Provides an SSL-protected universal access method, MAC address authentication, and IEEE 802.1X authentication; Web proxy server; support for a centralized portal; AAA security; WPA and WPA2 encryption; client-fixed IP address spoofing; per-site and per-user access lists; white-list and black-list support; and bandwidth limiting per user, per VLAN, or per VSC; and concurrent users (250 for the MSM720 and 2,000 for the MSM760, MSM765 zl, and MSM775 zl controllers)
- **Simplified management with central control**
  Reduces the time and complexity of managing a wireless network; the solution controls up to hundreds of APs (depending on the controller) from a single management interface and helps ensure that a consistent set of services is delivered throughout the wireless network; and the controllers push authentication, encryption, QoS enforcement, and access policies to the APs, delivering intelligence to the edge of mobile networks
- **Services**
  Provides standard L2 roaming and VoWLAN support on all controllers, advanced fast roaming on mobility controllers, plug-and-play AP management, as well as public and guest Internet access
- **Advanced fast roaming (requires a mobility controller or upgrade)**
  Provides WPA2 opportunistic key caching through controller support as well as inter/intra-subnet roaming and seamless roaming (less than 50 ms roaming delay) support for VoW deployments

Security

- **Integrated IDS support (requires the premium mobility version)**
  - *Automated AP and client classification*
    Reduces manual effort (the administrator can override AP classification)
  - *Comprehensive detection capabilities*
    Detects a wide range of attacks
  - *Flexible event reporting*
    Enables configuration that determines which events will result in notifications
  - *Location tracking capabilities*
    Helps identify the location of a rogue device
  - *Flexible deployment models*
    Supports time slicing or dedicating a radio to detect full time

Downloaded from www.Manualslib.com manuals search engine

- **SSH**
  Encrypts all transmitted data for secure remote CLI access over IP networks
- **SSL**
  Encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **IEEE 802.1X, Active Directory, and RADIUS network logins**
  Control wireless network access for authentication and accountability, using the IEEE 802.1X, Microsoft Active Directory, and RADIUS
- **RADIUS-based MAC authentication**
  Authenticates a wireless client with a RADIUS server, based on the MAC address of the client; this is useful for clients with minimal or no user interface
- **Web-based authentication**
  Provides a Web browser-based environment to authenticate clients that may not support the IEEE 802.1X supplicant
- **IEEE 802.1X supplicant on MSM APs**
  Helps prevent deployment of rogue networking equipment
- **Secure management access**
  Encrypts all access methods (CLI, GUI, or MIB) securely through SSH v2c, SSL, and/or SNMPv3

Policy management

- **Standards-based authentication support for Microsoft Active Directory and IEEE 802.1X**
  Integrates seamlessly into existing authentication services or uses the built-in database
- **Integration with HP IMC Network Management software**
  Helps ensure consistent policy enforcement across wired and wireless networks

Connectivity

- **10GbE connections to the switch fabric (the MSM765 zl and MSM775 zl premium mobility controllers only)**
  Leverages two 10GbE wire-speed internal connections to help ensure that the network connections from the application to the switch backplane do not limit application performance
- **IPv6 wireless client traffic forwarding**
  Is supported for L2 and L3 mobility (MTM) and for client traffic directly bridged at the APs
- **IEEE 802.3ad link-aggregation control protocol (LACP) and HP port trunking (the MSM720 controller only)**
  Support up to six ports bonded via LACP; and facilitates manually configured trunks between an HP switch and the controller

Downloaded from www.Manualslib.com manuals search engine

Performance

- **High-performance processor system**
  - *MSM720 controllers*
    Freescale Dual Core 800 MHz P1020 Processor, 256 KB cache, and 1 GB DDR3 memory
  - *MSM760 controllers*
    Intel® Core™ 2 Duo Processor E6400, 2.13 GHz, and 2 MB cache
  - *MSM765 zl controller*
    Intel Core 2 Duo Processor T7500, 2.2 GHz, and 4 MB cache
  - *MSM775 zl controller*
    Intel® Ivy Bridge Dual Core CPU Core i3-3120ME, 2.4 GHz, and 3 MB cache
- **Memory subsystems**
  - *MSM720 controllers*
    1 GB of DDR3 memory
  - *MSM760 controllers*
    2 GB of DDR2 memory
  - *MSM765 zl controllers*
    4 GB of DDR2 memory
  - *MSM775 zl controllers*
    4 GB ECC DDR3-1333 SO-DIMM
- **Disk drive (MSM76x models)**
  Enables rapid data reads/writes via the 250 GB SATA II 7200 rpm hard disk drive, providing improved application performance
- **Solid state drive (MSM775 zl model)**
  Enables rapid data reads/writes via the 32 GB SATA solid state drive (SSD), providing improved application performance

Additional information

- **TAA versions for the MSM720 controller**
  For U.S.-government-manufactured sales requirements, order the TAA MSM720 controller models; and for all other AMS and WW orders, use WW models
- **Licensing model for guest user access (v5.7 and later)**
  The full number of supported guest access user sessions is enabled with the base-level controller models and is no longer tied to the AP upgrade license; for example, the base MSM720 (access and premium mobility) controllers will now support 250 concurrent guest access user sessions and the MSM76x base controllers will now support 2,000 guest access user sessions without requiring additional AP license upgrades
- **10-AP license upgrade option**
  This can be used on the MSM720, MSM76x, and MSM775 zl products on all supported firmware releases

Downloaded from www.Manualslib.com manuals search engine

- **Licensing model for the MSM317 access device (v5.7 and later)**
  No additional AP license is required for the MSM317; non-MSM317 devices are subject to AP licensing; maximum wireless device limits per controller and team are unchanged, and all devices count toward these maximums; for example, an MSM760 could manage 200 MSM317 devices with no additional AP license, 40 APs and 160 MSM317 devices with no additional AP license; or 80 APs and 120 MSM317 devices with an additional 40-AP license
- **RFC and AP support**
  For a list of RFCs and other industry standards supported by the MSM solution, refer to the "mobility products specification sheet," which can be accessed at h17007.www1.hp.com/docs/mobility/4AA3-3883ENW.pdf. For access point support, refer to the HP Access Point—Controller Compatibility Matrix

Warranty and support

- **Lifetime Warranty 2.0—5y HDD**
  Advance hardware replacement for as long as you own the MSM720 and MSM765 zl controllers, with the exception of the hard disk drive in the MSM765 zl controller (which comes with a 5-year warranty); and next-business-day delivery (available in most countries)[1]
- **Lifetime Warranty 2.0**
  Advance hardware replacement for as long as you own the MSM775 zl controller with next-business-day delivery (available in most countries)[2]
- **Electronic and telephone support (for Lifetime Warranty 2.0)**
  Limited 24x7 telephone support is provided by HP for the first three years; limited electronic and business hours telephone support is provided by HP for the entire warranty period; to reach our support centers, visit hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, visit hp.com/networking/warrantysummary
- **1-year Warranty 2.0**
  Advance hardware replacement for the MSM760 controller with next-business-day delivery (available in most countries)
- **Electronic and telephone support (for Warranty 2.0)**
  Limited electronic and 24x7 telephone support is provided by HP for the entire warranty period; to reach our support centers, visit hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, visit hp.com/networking/warrantysummary
- **Software releases and warranty**
  The MSM720 and MSM775 zl controllers include all offered software releases for as long as you own the products; the MSM765 zl and MSM760 controllers include one year of bug fixes; for details on the software releases available with your product purchase, visit hp.com/networking/warrantysummary; to find software for your product, visit hp.com/networking/support

[1] HP warranty includes repair or replacement of hardware for as long as you own the product, with next-business-day advance replacement (available in most countries). The disk drives included—with the HP AllianceOne Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP AllianceOne Extended zl Module with Riverbed Steelhead, HP MSM765 zl Mobility Controller, and HP Survivable Branch Communication zl Module powered by Microsoft Lync—each have a five-year hardware warranty. For details, refer to the software license and hardware warranty statements at hp.com/networking/warranty.

[2] HP warranty includes repair or replacement of hardware for as long as you own the product, with next-business-day advance replacement (available in most countries). For details, refer to the software license and hardware warranty statements at hp.com/networking/warranty.

Downloaded from www.Manualslib.com manuals search engine

HP MSM Controller Series

Specifications

	HP MSM720 Premium Mobility Controller (WW) (J9694A)	HP MSM720 Access Controller (WW) (J9693A)	HP MSM720 TAA Access Controller (J9695A)
I/O ports and slots	4 RJ-45 autosensing 10/100/1000 ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 1 RJ-45 serial console port	4 RJ-45 autosensing 10/100/1000 ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 1 RJ-45 serial console port	4 RJ-45 autosensing 10/100/1000 ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 1 RJ-45 serial console port
Physical characteristics			
Weight	6.28(w) x 10(d) x 1.75(h) in. (15.95 x 25.4 x 4.45 cm) 3.62 lb (1.64 kg)	6.28(w) x 10(d) x 1.75(h) in. (15.95 x 25.4 x 4.45 cm) 3.62 lb (1.64 kg)	6.28(w) x 10(d) x 1.75(h) in. (15.95 x 25.4 x 4.45 cm) 3.62 lb (1.64 kg)
Mounting and enclosure	Supports the mounting options of the 2520-8 PoE switch, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting	Supports the mounting options of the 2520-8 PoE switch, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting	MSM720 controller supports the mounting options of the 2520-8 port, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting
Performance			
100 Mb Latency	< 20.4 µs (LIFO 64-byte packets)	< 20.4 µs (LIFO 64-byte packets)	
1000 Mb Latency	< 6.3 µs (LIFO 64-byte packets)	< 6.3 µs (LIFO 64-byte packets)	
Throughput	Up to 8.9 million pps	Up to 8.9 million pps	
Environment			
Operating temperature	41°F to 113°F (5°C to 45°C)	41°F to 113°F (5°C to 45°C)	41°F to 113°F (5°C to 45°C)
Operating relative humidity	15% to 95% @ 104°F (40°C)	15% to 95% @ 104°F (40°C)	15% to 95% @ 104°F (40°C)
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C)	15% to 95% @ 149°F (65°C)	15% to 95% @ 149°F (65°C)
Electrical characteristics			
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Maximum heat dissipation	70 BTU/hr (73.85 kJ/hr)	70 BTU/hr (73.85 kJ/hr)	
AC voltage	100–240 VAC	100–240 VAC	100–240 VAC
Current	2/1 A	2/1 A	
Maximum power rating	20 W	20 W	
Safety	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Emissions	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003

Downloaded from www.Manualslib.com manuals search engine

HP MSM Controller Series (continued)

Specifications (continued)

	HP MSM720 Premium Mobility Controller (WW) (J9694A)	HP MSM720 Access Controller (WW) (J9693A)	HP MSM720 TAA Access Controller (J9695A)
Features	*Supported:* – IEEE 802.11 n/a/b/g APs and/or access devices – 10 to 40 APs and/or access devices (in increments of 10) – IEEE 802.3ad Link Aggregation Control Protocol (LACP) – 250 simultaneous guest access users *Included services:* – Plug-and-play AP management and WLAN management – Guest access – Captive portal – PCI DSS compliance for wireless PoS traffic – Support for Real-Time Location Services (RTLS) – Advanced fast roaming with VoWLAN support – Mobility Traffic Manager (MTM) – Support for up to 64 VSC profiles – Unified policy enforcement and network visibility – Virtual controller (up to two MSM720 controllers and 40 APs with resiliency)	*Supported:* – IEEE 802.11 n/a/b/g APs and/or access devices – 10 to 40 APs and/or access devices (in increments of 10) – IEEE 802.3ad Link Aggregation Control Protocol (LACP) – 250 simultaneous guest access users *Included services:* – Plug-and-play AP management and WLAN management – Guest access – Captive portal – PCI DSS compliance for wireless PoS traffic – Support for Real-Time Location Services (RTLS) – Standard Layer 2 roaming with VoWLAN support – Support for up to 16 VSC profiles – Unified policy enforcement and network visibility	*Supported:* – IEEE 802.11 n/a/b/g APs and/or access devices – 10 to 40 APs and/or access devices (in increments of 10) – IEEE 802.3ad Link Aggregation Control Protocol (LACP) – 250 simultaneous guest access users *Included services:* – Plug-and-play AP management and WLAN management – Guest access – Captive portal – PCI DSS compliant for wireless PoS traffic – Support for Real-Time Location Services (RTLS) – Standard Layer 2 roaming with VoWLAN support – Support for up to 16 VSC profiles – Unified policy enforcement and network visibility
Notes	Latency values refer to client traffic bridged locally at the AP. Not all services are supported with the Virtual Controller feature. Please refer to the user documentation for more detail. For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.	Latency values refer to client traffic bridged locally at the AP. For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.	Latency values refer to client traffic bridged locally at the AP. For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.
Services	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Downloaded from www.Manualslib.com manuals search engine

HP MSM Controller Series (continued)

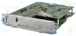
Specifications

	 HP MSM760 Premium Mobility Controller (J9420A)	 **HP MSM760 Access Controller (J9421A)**
I/O ports and slots	2 RJ-45 autosensing 10/100/1000 ports Duplex 10BASE-T/100BASE-TX half or full, 1000BASE-T full only (IEEE 802 3 Type 10BASE-T, IEEE 802 3u Type 100BASE-TX, IEEE 802 3ab Type 1000BASE-T)	2 RJ-45 autosensing 10/100/1000 ports Duplex 10BASE-T/100BASE-TX half or full, 1000BASE-T full only (IEEE 802 3 Type 10BASE-T, IEEE 802 3u Type 100BASE-TX, IEEE 802 3ab Type 1000BASE-T)
Physical characteristics	1 RJ-45 serial console port 17 32(w) x 15 38(d) x 1 75(h) in (43 99 x 39 07 x 4 45 cm) (1U height)	1 RJ-45 serial console port 17 32(w) x 15 38(d) x 1 75(h) in (43 99 x 39 07 x 4 45 cm) (1U height)
Services	Refer to the HP website at hp com/networking/services for details on the service-level descriptions and product numbers For details about services and response times in your area, please contact your local HP sales office	Refer to the HP website at hp com/networking/services for details on the service-level descriptions and product numbers For details about services and response times in your area, please contact your local HP sales office
Weight	13 45 lb (6 1 kg)	13 45 lb (6 1 kg)
Mounting and enclosure	Mounts in an EIA-standard 19 in Telco rack or equipment cabinet (hardware included), horizontal surface mounting only	Mounts in an EIA-standard 19 in Telco rack or equipment cabinet (hardware included) horizontal surface mounting only
Environment		
Operating temperature	41°F to 104°F (5°C to 40°C)	41°F to 104°F (5°C to 40°C)
Nonoperating/Storage temperature	-40°F to 149°F (-40°C to 65°C)	-40°F to 149°F (-40°C to 65°C)
Operating relative humidity	15% to 80%, noncondensing	15% to 80%, noncondensing
Nonoperating/Storage relative humidity	15% to 80%, noncondensing	15% to 80%, noncondensing
Electrical characteristics		
Frequency	50/60 Hz	50/60 Hz
Maximum heat dissipation	434 BTU/hr (457 87 kJ/hr)	434 BTU/hr (457 87 kJ/hr)
AC voltage	100–240 VAC	100–240 VAC
Current	2/1 A	2/1 A
Maximum power rating	127 W	127 W
Safety	UL 60950-1, IEC 60950-1, EN 60950-1, CAN/CSA-C22 2 No 60950-1	UL 60950-1, IEC 60950-1, EN 60950-1 CAN/CSA-C22 2 No 60950-1
Emissions	FCC part 15 Class A, EN 55022 Class A, CISPR 22 Class A, ICES-003	FCC part 15 Class A, EN 55022 Class A, CISPR 22 Class A, ICES-003
Features	*Supported* – IEEE 802 11 n/a/b/g access points and/or access devices – 40 to 200 access points and/or access devices (in increments of 10 or 40) – MSM firmware releases prior to MSM v5 7 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users – MSM v5 7 and later 2,000 simultaneous guest access users with base product *Included services* – Plug-and-play AP management and WLAN management – Guest access – Captive portal – PCI DSS compliance for wireless PoS traffic – Support for Real-Time Location Services (RTLS) – Advanced fast roaming with VoWLAN support – Mobility Traffic Manager (MTM) – Support for up to 64 VSC profiles – Unified policy enforcement and network visibility	*Supported* – IEEE 802 11 n/a/b/g access points and/or access devices – 40 to 200 access points and/or access devices (in increments of 10 or 40) – MSM firmware releases prior to MSM v5 7 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users – MSM v5 7 and later 2,000 simultaneous guest access users with base product *Included services* – Plug-and-play AP management and WLAN management – Guest access – Captive portal – PCI DSS compliance for wireless PoS traffic – Support for Real-Time Location Services (RTLS) – Standard Layer 2 roaming with VoWLAN support – Support for up to 16 VSC profiles – Unified policy enforcement and network visibility – Virtual controller (up to five MSM765 zl controllers and 800 APs with resiliency)
Notes	Not all services are supported with the Virtual Controller feature	Please refer to the user documentation for more detail
Services	Refer to the HP website at hp com/networking/services for details on the service-level descriptions and product numbers For details about services and response times in your area, please contact your local HP sales office	Refer to the HP website at hp com/networking/services for details on the service-level descriptions and product numbers For details about services and response times in your area, please contact your local HP sales office

Downloaded from www.Manualslib.com manuals search engine

HP MSM Controller Series (continued)

Specifications



	HP MSM775 zl Premium Controller Module (J9840A)	HP MSM765 zl Premium Mobility Controller (J9370A)
Physical characteristics		
	8 13(w) x 9 75(d) x 1 75(h) in (20 65 x 24 77 x 4 45 cm)	8 13(w) x 10 3(d) x 1 75(h) in (20 65 x 26 16 x 4 45 cm)
Weight	2 65 lb (1 2 kg)	2 05 lb (0 93 kg)
Mounting and enclosure	Can be installed in any of the following chassis HP 5406 zl (J8697A) 5412 zl (J8698A) HP 8206 zl (J9640A) and 8212 zl (J8715A)	Can be installed in any of the following chassis HP 5406 zl (J8697A), 5412 zl (J8698A), and 8212 zl (J8715A)
Environment		
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing	15% to 95% @ 131°F (55°C), noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C) noncondensing	15% to 95%, noncondensing
Nonoperating/Storage Altitude	Up to 15 000 ft (4 6 km)	Up to 10 000 ft (3 km)
Notes	The SSD has a maximum operational wet bulb temperature of 35°C (95°F) and a maximum nonoperational wet bulb temperature of 40°C (104°F)	
Electrical characteristics		
Maximum heat dissipation	188 BTU/hr (198 34 kJ/hr)	272 BTU/hr (287 kJ/hr)
Maximum power rating	55 W	80 W
Idle power	30 W	36 W
Notes	Idle power is the actual power consumption of the device with no ports connected	Idle power is the actual power consumption of the device with no ports connected
Safety	UL 60950-1, IEC 60950-1, EN 60950-1, CAN/CSA-C22 2 No 60950-1	UL 60950-1, IEC 60950-1, EN 60950-1 CAN/CSA-C22 2 No 60950-1
Emissions	FCC part 15 Class A EN 55022 Class A, CISPR 22 Class A, ICES-003	FCC part 15 Class A EN 55022 Class A, CISPR 22 Class A, ICES-003
Features	*Supported* – IEEE 802 11 n/a/b/g access points and/or access devices – 40 to 200 access points and/or access devices (in increments of 10 or 40) – MSM firmware releases prior to MSM v5 7 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users – MSM v5 7 and later 2,000 simultaneous guest access users with base product *Included services* – Plug-and-play AP management and WLAN management – Guest access (up to 2000 concurrent guest access user sessions are supported) – Advanced fast roaming with VoWLAN support – Mobility Traffic Manager (MTM) – Support for up to 64 VSC profiles – Unified policy enforcement and network visibility – Virtual controller (up to five MSM765 zl controllers and 800 APs with resiliency)	*Supported* – IEEE 802 11 n/a/b/g access points and/or access devices – 40 to 200 access points and/or access devices (in increments of 10 or 40) – MSM firmware releases prior to MSM v5 7 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack up to a maximum of 2 000 guest access users – MSM v5 7 and later 2,000 simultaneous guest access users with base product *Included services* – Guest access – Captive portal – PCI DSS compliance for wireless PoS traffic – Support for Real-Time Location Services (RTLS)

Downloaded from www.Manualslib.com manuals search engine

HP MSM Controller Series (continued)

Specifications (continued)

	HP MSM775 zl Premium Controller Module (J9840A)	HP MSM765 zl Premium Mobility Controller (J9370A)
Notes	• Not all services are supported with the Virtual Controller feature. Please refer to the user documentation for more detail. • MSM775 zl modules can only be teamed with other MSM775 zl modules. Chassis Configuration Guidelines: • Up to six MSM775 modules can be installed in an HP 5406 zl, HP 5412 zl, HP 8206 zl or HP 8212 zl, chassis if no other service modules are installed. • Note that the maximum number of service modules in a chassis is 6. So if other service modules are installed in the same chassis, the total number of MSM775 zl modules than can be inserted in a chassis is reduced such that the total number of all service modules in a chassis does not exceed 6. • There are no restrictions on what slots the MSM775 zl modules are inserted into. • Maximum chassis operating temperature specifications of the HP 5400 zl chassis when the MSM775 zl module is installed is 45°C. Note that the maximum temperature of the chassis is determined by the module with the lowest operating temperature. • The maximum HP 8200 zl chassis operating temperature specification (45°C) does not change when a MSM775 zl module is installed. • Note that installation of the MSM775 does not increase or decrease documented chassis limits for other service modules.	A maximum of four MSM765 zl controllers can be installed in the same chassis, and a maximum of three MSM765 zl controllers are supported in the 5406 zl switch. Not all services are supported with the Virtual Controller feature. Please refer to the user documentation for more detail.
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UQ601E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UQ602E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ604E) 3-year, 9x5 SW phone support, software updates (UQ617E) 3-year, 24x7 SW phone support, software updates (UQ618E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HS511E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HS512E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HS513E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UQ605E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UQ606E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UQ608E) 4-year, 24x7 SW phone support, software updates (UQ607E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UQ609E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UQ610E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UQ612E) 5-year, 24x7 SW phone support, software updates (UQ611E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HS515E) 1-year, 24x7 software phone support, software updates (HS514E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV086E) 1-year, 24x7 software phone support, software updates + 4-hour hardware exchange (HV087E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV088E) 3-year, 24x7 software phone support, software updates + 4-hour Hardware Exchange (HV089E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV090E) 4-year, 24x7 software phone support, software updates + 4-hour Hardware Exchange (HV091E) 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV092E) 5-year, 24x7 software phone support, software updates + 4-hour Hardware Exchange (HV093E) Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Downloaded from www.Manualslib.com manuals search engine

HP MSM Controller Series accessories

HP MSM720 Premium Mobility Controller (WW) (J9694A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
HP MSM Additional 10 Access Point License (J9697A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)

HP MSM720 Access Controller (WW) (J9693A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
HP MSM Additional 10 Access Point License (J9697A)
HP MSM720 Premium Mobility License (J9698A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)
HP MSM720 Premium E-LTU (J9698AAE)

HP MSM720 TAA Premium Mobility Controller (J9696A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X121 1G SFP RJ45 T Transceiver (J8177C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
HP MSM Additional 10 Access Point License (J9697A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)

Downloaded from www.Manualslib.com manuals search engine

HP MSM720 TAA Access Controller (J9695A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X121 1G SFP RJ45 T Transceiver (J8177C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
HP MSM Additional 10 Access Point License (J9697A)
HP MSM720 Premium Mobility License (J9698A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)
HP MSM720 Premium E-LTU (J9698AAE)

HP MSM760 Premium Mobility Controller (J9420A)

HP MSM Additional 10 Access Point License (J9697A)
HP MSM Additional 40 Access Point License (J9371A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)
HP MSM Additional 40 Access Point E-LTU (J9371AAE)

HP MSM760 Access Controller (J9421A)

HP MSM Additional 10 Access Point License (J9697A)
HP MSM Additional 40 Access Point License (J9371A)
HP MSM760 Premium Mobility License (J9491A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)
HP MSM Additional 40 Access Point E-LTU (J9371AAE)
HP MSM760 Premium E-LTU (J9491AAE)

HP MSM775 zl Premium Controller Module (J9840A)

HP MSM Additional 10 Access Point License (J9697A)
HP MSM Additional 40 Access Point License (J9371A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)
HP MSM Additional 40 Access Point E-LTU (J9371AAE)

HP MSM765 zl Premium Mobility Controller (J9370A)

HP MSM Additional 10 Access Point License (J9697A)
HP MSM Additional 40 Access Point License (J9371A)
HP MSM Additional 10 Access Point E-LTU (J9697AAE)
HP MSM Additional 40 Access Point E-LTU (J9371AAE)

Learn more at
hp.com/networking

Downloaded from www.Manualslib.com manuals search engine

Sign up for updates
hp.com/go/getupdated

Share with colleagues

Rate this document

© Copyright 2008–2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Intel and Intel Core are trademarks of Intel Corporation in the U.S. and other countries. Microsoft is a U.S. registered trademark of the Microsoft group of companies.

4AA2-3153ENW, February 2014, Rev. 13

Downloaded from www.Manualslib.com manuals search engine